CLAIMS

1. A genetically-modified, non-human mammal, wherein the genetic modification results in a disrupted RAMP1 or RAMP3 gene.

2. The mammal of claim 1, wherein said mammal is a mouse.

3. The mammal of claim 1, wherein said mammal expresses an exogenous reporter gene under the control of the regulatory sequences of said RAMP1 or RAMP3 gene.

4. A genetically-modified, non-human mammal, wherein said mammal is heterozygous for a genetic modification which results in a disrupted RAMP2 gene and results in expression of an exogenous reporter gene under the control of the regulatory sequences of said RAMP2 gene.

5. The mammal of claim 4, wherein said mammal is a mouse.

6. A genetically-modified animal cell, wherein the modification comprises a disrupted RAMP1, RAMP2, or RAMP3 gene.

7. The animal cell of claim 6, wherein said cell is an embryonic stem (ES) cell.

8. The animal cell of claim 6, wherein said cell is human or murine.

9. A membrane preparation derived from a genetically-modified animal cell comprising a disrupted RAMP1, RAMP2, or RAMP3 gene.

10. A method of treating a disorder associated with liver function and/or muscle metabolism in a mammal, said method comprising administering an agent that modulates RAMP1 activity.

11. The method of claim 10, wherein said agent increases RAMP1 activity and is administered to treat or prevent congestive heart failure, mitral stenosis, acute myocardial infarction, hypertension, chronic or acute hepatitis, hepatomegaly, hepatic steatosis, biliary atresia, gallstones, or chemical or drug-induced hepatotoxicity.

12. A method of identifying an agent that modulates RAMP1, RAMP2, or RAMP3 activity, said method comprising:

(a) contacting said agent with a mammalian cell from the female or male reproductive tract, or the skin, and measuring RAMP1 activity;

(b) contacting said agent with a mammalian spermatogenic cell, and measuring RAMP2 activity; or

(c) contacting said agent with a mammalian cell from the caudate putamen, the laterodorsal thalamic region of the cerebrum, or the male reproductive tract, and measuring RAMP3 activity;

wherein a difference between said activity in (a), (b), or (c), in the absence of the agent and in the presence of the agent is indicative that the agent can modulate RAMP1, RAMP2, or RAMP3 activity, respectively.

13. A method of identifying an agent that modulates RAMP1, RAMP2, or RAMP3 gene expression, said method comprising:

(a) contacting an agent with a mammalian cell from the female or male reproductive tract, or the skin, that expresses a coding sequence under the control of RAMP1 gene regulatory sequences, and measuring expression of said coding sequence;

(b) contacting an agent with a mammalian spermatogenic cell that expresses a coding sequence under the control of RAMP2 gene regulatory sequences, and measuring expression of said coding sequence; or

(c) contacting an agent with a mammalian cell from the caudate putamen, the laterodorsal thalamic region of the cerebrum, or the male reproductive tract, that expresses a coding sequence under the control of RAMP3 gene regulatory sequences, and measuring expression of said coding sequence,

wherein a difference between said expression in (a), (b), or (c), in the absence of the agent and in the presence of the agent is indicative that the agent can modulate RAMP1, RAMP2, or RAMP3 gene expression, respectively.

14. The method of claim 13, wherein said coding sequence encodes a reporter polypeptide.